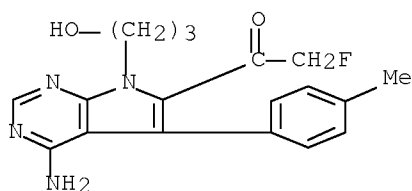


L5 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2007:1069336 CAPLUS Full-text  
 DN 147:499996  
 TI FGFR3 activates RSK2 to mediate hematopoietic transformation through  
 tyrosine phosphorylation of RSK2 and activation of the MEK/ERK pathway  
 AU Kang, Sumin; Dong, Shaozhong; Gu, Ting-Lei; Guo, Ailan; Cohen, Michael S.;  
 Lonial, Sagar; Khoury, Hanna Jean; Fabbro, Dorian; Gilliland, D. Gary;  
 Bergsagel, P. Leif; Taunton, Jack; Polakiewicz, Roberto D.; Chen, Jing  
 CS Winship Cancer Institute, Emory University School of Medicine, Atlanta,  
 GA, 30322, USA  
 SO Cancer Cell (2007), 12(3), 201-214  
 CODEN: CCAECI; ISSN: 1535-6108  
 PB Cell Press  
 DT Journal  
 LA English  
 AB To better understand the signaling properties of oncogenic FGFR3, we performed  
 phospho-proteomics studies to identify potential downstream signaling  
 effectors that are tyrosine phosphorylated in hematopoietic cells expressing  
 constitutively activated leukemogenic FGFR3 mutants. We found that FGFR3  
 directly tyrosine phosphorylates the serine/threonine kinase p90RSK2 at Y529,  
 which consequently regulates RSK2 activation by facilitating inactive ERK  
 binding to RSK2 that is required for ERK-dependent phosphorylation and  
 activation of RSK2. Moreover, inhibition of RSK2 by siRNA or a specific RSK  
 inhibitor fmk effectively induced apoptosis in FGFR3-expressing human t(4;14)-  
 pos. multiple myeloma cells. Our findings suggest that FGFR3 mediates  
 hematopoietic transformation by activating RSK2 in a two-step fashion,  
 promoting both the ERK-RSK2 interaction and subsequent phosphorylation of RSK2  
 by ERK.  
 IT 821794-92-7  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (Fmk as a first generation RSK inhibitor shows promising but so far  
 limited effectiveness in treatment of FGFR3-expressing myeloma cells)  
 RN 821794-92-7 CAPLUS  
 CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-  
 d]pyrimidin-6-yl]-2-fluoro- (CA INDEX NAME)



RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2007:382499 CAPLUS Full-text  
 DN 146:395261  
 TI Selective serine/threonine kinase inhibitors  
 IN Taunton, Jack; Cohen, Michael; Shokat, Kevan; Zhang, Chao  
 PA The Regents of the University of California, USA  
 SO PCT Int. Appl., 84pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007038613	A2	20070405	WO 2006-US37699	20060926
	WO 2007038613	A3	20071122		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
	RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA			

PRAI US 2005-720902P P 20050926

OS MARPAT 146:395261

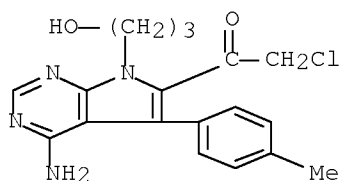
AB Inhibition of protein kinases having one or more cysteine residues within the ATP binding site is effected by contacting the kinase, per se or in a cell or subject, with an inhibitory-effective amount of a compound having a heterocyclic core structure comprised of two or more fused rings containing at least one nitrogen ring atom, and an electrophilic substituent that is capable of reacting with a cysteine residue within the ATP binding site of a kinase. Preferred compds. include certain pyrrolopyrimidines and oxindoles having such an electrophilic substituent and optionally an aromatic or heteroarom. substituent that is capable of interacting with a threonine or smaller residue located in the gatekeeper position of the kinase. Kinases lacking such cysteine residues may be engineered or modified so that they are capable of being inhibited by such compds. by replacing a valine or other amino acid residue within the ATP binding site by a cysteine residue.

IT 821794-90-5

RL: PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses) (selective serine/threonine kinase inhibitors including pyrrolopyrimidines and oxindoles for prevention and treatment of cancer)

RN 821794-90-5 CAPLUS

CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-chloro- (CA INDEX NAME)

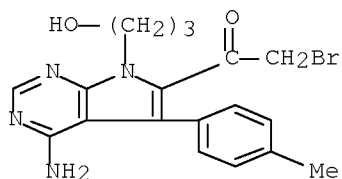


IT 821794-87-0P 821794-92-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (selective serine/threonine kinase inhibitors including pyrrolopyrimidines and oxindoles for prevention and treatment of cancer)

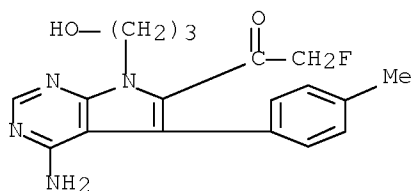
RN 821794-87-0 CAPLUS

CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-bromo- (CA INDEX NAME)



RN 821794-92-7 CAPLUS

CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-fluoro- (CA INDEX NAME)

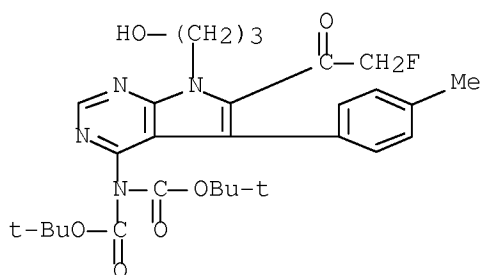


IT 932740-45-9P

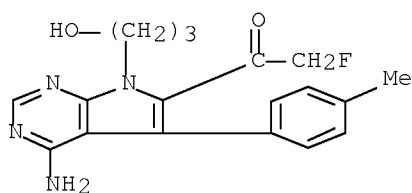
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (selective serine/threonine kinase inhibitors including pyrrolopyrimidines and oxindoles for prevention and treatment of cancer)

RN 932740-45-9 CAPLUS

CN Imidodicarbonic acid, N-[6-(2-fluoroacetyl)-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-4-yl]-, C,C'-bis(1,1-dimethylethyl) ester (CA INDEX NAME)

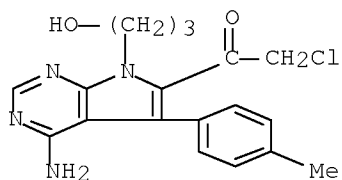


L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2007:171320 CAPLUS Full-text  
 DN 146:417272  
 TI A clickable inhibitor reveals context-dependent autoactivation of p90 RSK  
 AU Cohen, Michael S.; Hadjivassiliou, Haralambos; Taunton, Jack  
 CS Program in Chemistry and Chemical Biology, and Department of Cellular and  
 Molecular Pharmacology, University of California, San Francisco, CA,  
 94158-2280, USA  
 SO Nature Chemical Biology (2007), 3(3), 156-160  
 CODEN: NCBABT; ISSN: 1552-4450  
 PB Nature Publishing Group  
 DT Journal  
 LA English  
 AB P90 ribosomal protein S6 kinases (RSKs) integrate upstream signals through two  
 catalytic domains. Autophosphorylation of Ser386 by the regulatory C-terminal  
 kinase domain (CTD) is thought to be essential for activation of the N-  
 terminal kinase domain (NTD), which phosphorylates multiple downstream  
 targets. We recently reported fmk, an irreversible inhibitor of the CTD of  
 RSK1 and RSK2. Here we describe fmk-pa, a propargylamine variant that has  
 improved cellular potency and a 'clickable' tag for assessing the extent and  
 selectivity of covalent RSK modification. Copper-catalyzed conjugation of an  
 azidoalkyl reporter (the click reaction) revealed that fmk-pa achieves  
 selective and saturable modification of endogenous RSK1 and RSK2 in mammalian  
 cells. Saturating concns. of fmk-pa inhibited Ser386 phosphorylation and  
 downstream signaling in response to phorbol ester stimulation, but had no  
 effect on RSK activation by lipopolysaccharide. RSK autoactivation by the CTD  
 is therefore context dependent, which suggests that NTD and CTD inhibitors  
 should have distinct physiol. effects.  
 IT 821794-92-7P  
 RL: BSU (Biological study, unclassified); SPN (Synthetic preparation);  
 BIOL (Biological study); PREP (Preparation)  
 (N-terminal kinase domain activates p90 ribosomal protein S6 kinase  
 C-terminal domain through autophosphorylation at Ser323 and Ser236  
 residues)  
 RN 821794-92-7 CAPLUS  
 CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-  
 d]pyrimidin-6-yl]-2-fluoro- (CA INDEX NAME)

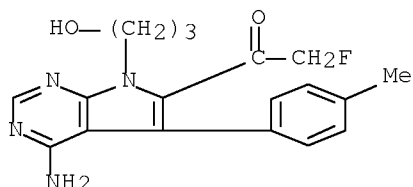


RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2005:464185 CAPLUS Full-text  
 DN 143:168587  
 TI Structural Bioinformatics-Based Design of Selective, Irreversible Kinase Inhibitors  
 AU Cohen, Michael S.; Zhang, Chao; Shokat, Kevan M.; Taunton, Jack  
 CS Program Chemistry and Chemical Biology and Dep. Cellular and Molecular Pharmacology, Univ. California, San Francisco, CA, 94143-2280, USA  
 SO Science (Washington, DC, United States) (2005), 308(5726), 1318-1321  
 CODEN: SCIEAS; ISSN: 0036-8075  
 PB American Association for the Advancement of Science  
 DT Journal  
 LA English  
 AB The active sites of 491 human protein kinase domains are highly conserved, which makes the design of selective inhibitors a formidable challenge. We used a structural bioinformatics approach to identify two selectivity filters, a threonine and a cysteine, at defined positions in the active site of p90 ribosomal protein S6 kinase (RSK). A fluoromethylketone inhibitor, designed to exploit both selectivity filters, potently and selectively inactivated RSK1 and RSK2 in mammalian cells. Kinases with only one selectivity filter were resistant to the inhibitor, yet they became sensitized after genetic introduction of the second selectivity filter. Thus, two amino acids that distinguish RSK from other protein kinases are sufficient to confer inhibitor sensitivity.  
 IT 821794-90-5 821794-92-7  
 RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)  
 (structural bioinformatics-based design of selective, irreversible inhibitors of p90 ribosomal protein S6 kinase (RSK) based on selectivity filters)  
 RN 821794-90-5 CAPLUS  
 CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-chloro- (CA INDEX NAME)



RN 821794-92-7 CAPLUS  
 CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-fluoro- (CA INDEX NAME)



RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2005:14132 CAPLUS Full-text  
 DN 142:114090  
 TI A preparation of N-containing heterocyclic compounds, useful as selective  
 serine/threonine kinase inhibitors  
 IN Taunton, Jack; Cohen, Michael; Shokat, Kevan; Zhang, Chao  
 PA The Regents of the University of California, USA  
 SO PCT Int. Appl., 70 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005000197	A2	20050106	WO 2004-US11297	20040412
	WO 2005000197	A3	20050901		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,				
	LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,				
	NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,				
	TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:				
	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,				
	BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,				
	ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,				
	SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,				
	TD, TG				
	US 20070082884	A1	20070412	US 2005-552847	20051011
PRAI	US 2003-462554P	P	20030411		
	WO 2004-US11297	W	20040412		
OS	MARPAT 142:114090				
GI					

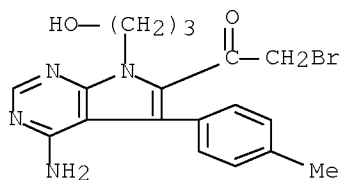
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to a preparation of N-containing heterocyclic compds., e.g. pyrrolopyrimidine derivs. of formula I [wherein: R1 is NH2, NH-heterocyclyl, or NH-aryl, etc.; R2 is (CH2)0-3R6; R6 is aromatic or (hetero)cyclic group; R3 and R4 are independently selected from H, aliphatic, aromatic, or heterocyclic group, etc.; R5 is H, alkyl- or aryl-substituted ether, thioether, or amine, etc.], useful as selective serine/threonine kinase inhibitors. Inhibition of protein kinases having one or more cysteine residues within the ATP binding site is effected by contacting the kinase, per se or in a cell or subject, with an inhibitory-effective amount of a compound having a heterocyclic core structure comprised of two or more fused rings containing at least one nitrogen ring atom, and an electrophilic substituent that is capable of reacting with a cysteine residue within the ATP binding site of a kinase. Kinases lacking such cysteine residues may be engineered or modified so that they are capable of being inhibited by such compds. by replacing a valine or other amino acid residue within the ATP binding site by a cysteine residue. For instance, pyrrolopyrimidine derivative II [Rsk2 inhibition (IC50, µM): WT - 0.015, C436V - >10, T439M - 3.4] was prepared via bromination of III by NBS, bromine/fluorine-exchange reaction of the obtained compound IV in the presence of KF, and subsequent hydrolysis (the yield of the exchange reaction was 40%).

IT 821794-87-0P 821794-90-5P 821794-92-7P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of N-containing heterocyclic compds. useful as selective serine/threonine kinase inhibitors)

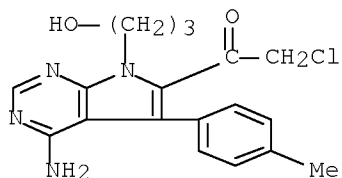
RN 821794-87-0 CAPLUS

CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-bromo- (CA INDEX NAME)



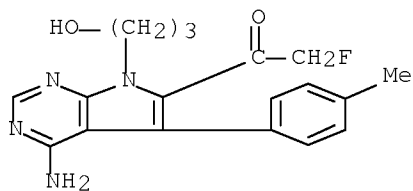
RN 821794-90-5 CAPLUS

CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-chloro- (CA INDEX NAME)

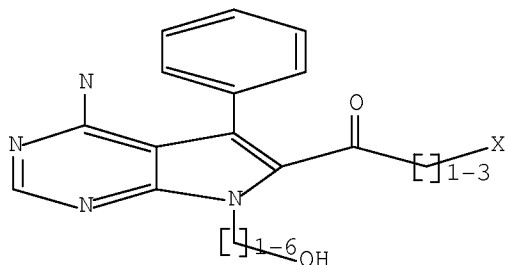


RN 821794-92-7 CAPLUS

CN Ethanone, 1-[4-amino-7-(3-hydroxypropyl)-5-(4-methylphenyl)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]-2-fluoro- (CA INDEX NAME)



```
=> d l2; d his; log y
L2 HAS NO ANSWERS
L1 STR
```



Structure attributes must be viewed using STN Express query preparation.  
L2 QUE ABB=ON PLU=ON L1

(FILE 'HOME' ENTERED AT 15:12:40 ON 25 APR 2008)

FILE 'REGISTRY' ENTERED AT 15:13:11 ON 25 APR 2008

```
L1 STRUCTURE UPLOADED
L2 QUE L1
L3 0 S L2
L4 4 S L2 FUL
```

FILE 'CAPLUS' ENTERED AT 15:14:02 ON 25 APR 2008

```
L5 5 S L4
```

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	28.21	206.78
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-4.00	-4.00

STN INTERNATIONAL LOGOFF AT 15:15:30 ON 25 APR 2008